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TITLE: DAMPER FOR SUPPORTING DRIVE CHASSIS OF DISK PLAYER  
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ABSTRACT:

PURPOSE: To prevent the generation of reading errors even when a player main body is laid horizontally or stood vertically.

CONSTITUTION: The drive chassis-supporting damper 10 is set between a disk-supporting tray 2 adapted to project/retreat to a player main body 1 of a disk player and a drive mechanism-supporting drive chassis 6 disposed on the rear side of the tray 2. The damper 10 is provided with a damper member 10a which supports the drive chassis 6 so that the drive chassis 6 can oscillate up and down in the state where the main body 1 is laid down horizontally, and a damper member 10b which supports the drive chassis 6 so that the drive chassis can oscillate up and down in the state where the main body 1 is stood upright.

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CLAIMS

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[Claim(s)]

[Claim 1] It is the damper for drive chassis support formed between the drive chassis for drive device support arranged at the rear-face side of the tray for disk support prepared in the body of a player of a disk player possible [ \*\*\*\* ], and this tray. the condition of having made said body of a player into the shape of a horizontal every width -- a drive chassis -- the vertical direction -- with the \*\* damper member every [ which is supported rockable ] width the condition of having carried out said body of a player every length -- a drive chassis -- the vertical direction -- the absorber for drive chassis support of the disk player characterized by having the \*\* absorber member every [ which is supported rockable ] length.

[Claim 2] The \*\* damper member is the damper for drive chassis support of the disk player according to claim 1 characterized by really being formed mutually the \*\* damper member and every length said every width.

[Claim 3] It is the damper for drive chassis support of the disk player according to claim 1 or 2 characterized by carrying out fitting of the crevice formed in the narrow diameter portion which it was pinched on the stopper member and tray which were attached at the tip of this lobe, and was formed in the peripheral face at the drive chassis dismountable while being attached outside the lobe to which the \*\* damper member protruded on the rear face of said tray said every width.

[Claim 4] It is the damper for drive chassis support of the disk player according to claim 2 or 3 characterized by having the engagement section engaged dismountable [ to the crevice formed in the lobe which the \*\* damper member really protruded on the body of a damper which was really formed in the \*\* damper member every width , and in which elastic deformation is possible , and this body of a damper and really protruded on the rear face of said tray ] said every length .

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention makes the disk player usable also as a mold every length also as a mold every width about the absorber for drive chassis support of the disk player for compact disks (it is hereafter called a disk for short) called CD.

[0002]

[Description of the Prior Art] Conventionally, there are some which are shown in drawing 6 - drawing 8 as an example of a disk player. Two or more tubed lobe 2a really protrudes on the rear-face proper place of the tray 2 for disk support which prepared this in the body 1 of a player possible [ \*\*\*\* ]. By attaching the absorber 3 made of tubed rubber outside this each lobe 2a, and thrusting the stopper bolt 5 into the hole of each of this lobe 2a through a washer 4 By pinching said absorber 3 on a washer 4 and a tray 2, and carrying out fitting of the crevice 6a formed in the drive chassis 6 to narrow diameter portion 3a formed in the peripheral face of this absorber 3 dismountable As the drive chassis 6 is supported by the tray 2 through each absorber 3, drive devices, such as a spindle motor 7, are carried in said drive chassis 6 and it is shown in drawing 8 By making a tray 2 project from the body 1 of a player, retreating a tray 2 in the body 1 of a player, after setting Disk D to the turntable 8 which fixed to the revolving shaft of a spindle motor 7, and pushing a start button While said drive device operates, carrying out the rotation drive of the spindle motor 7 and rotating Disk D When an optical pickup (not shown) is moved in the direction of a path of Disk D, and the information currently recorded on Disk D is read and said each damper 3 expands and contracts along the direction of an axial center of lobe 2a He absorbs vibration of the drive chassis 6 generated by operating a drive device, and is trying for a reading error not to arise.

[0003]

[Problem(s) to be Solved by the Invention] Although vibration of the drive chassis 6 generated by operating a drive device is absorbed with each damper 3 and a reading error can be prevented from being generated with the above-mentioned conventional configuration as shown in the drawing 6 continuous line when the body 1 of a player is carried out every width As the drawing 6 imaginary line shows, when the body 1 of a player is carried out every length due to an installation tooth space, it is difficult to absorb vibration of the drive chassis 6 generated by operating a drive device with each damper 3, and there is a possibility that a reading error may arise.

[0004] Even if this invention adopts how to place every width and any of every

length for the body of a player in view of the above-mentioned conventional fault, it aims at offering the damper for drive chassis support of the disk player it was made not to produce a reading error.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention according to claim 1 It is the damper for drive chassis support formed between the drive chassis for drive device support arranged at the rear-face side of the tray for disk support prepared in the body of a player of a disk player possible [ \*\*\*\* ], and this tray. the condition of having made said body of a player into the shape of a horizontal every width -- a drive chassis -- the vertical direction -- with the \*\* damper member every [ which is supported rockable ] width the condition of having carried out said body of a player every length -- a drive chassis -- the vertical direction -- it is characterized by having the \*\* damper member every [ which is supported rockable ] length.

[0006] Invention according to claim 2 is characterized by really forming the \*\* damper member of each other every length with the \*\* damper member said every width in invention according to claim 1.

[0007] Invention according to claim 3 is pinched on the stopper member and tray which were attached at the tip of this lobe, and is characterized by carrying out fitting of the crevice formed in the narrow diameter portion formed in the peripheral face at the drive chassis dismountable while the \*\* damper member is attached outside the lobe which protruded on the rear face of said tray said every width.

[0008] Invention according to claim 4 is characterized by having the engagement section which engages with the crevice formed in the lobe which the \*\* damper member really protruded on the body of a damper which was really formed in the \*\* damper member every width, and in which elastic deformation is possible, and this body of a damper, and really protruded on the rear face of said tray dismountable said every length in invention according to claim 2 or 3.

[0009]

[Function] By retreating this tray in the body of a player, and pushing a start button, after setting a disk to the tray made to project from the body of a player in invention according to claim 1 While the drive device currently supported by the drive chassis arranged to the rear-face side of said tray operates and rotating said disk An optical pickup can be moved in the direction of a path of a disk, and the information currently recorded on the disk can be read now by the optical pickup.

[0010] in this case, when said body of a player is made into the shape of a horizontal every width When it is supported by the \*\* absorber member free [ the vertical direction rocking of said drive chassis ] every width and the body of a player is carried out every length Since said drive chassis is supported by the \*\* absorber member free [ the vertical direction rocking ] every length In any case, vibration of the drive chassis generated by operating a drive device is absorbed by the \*\* damper member the \*\* damper member or every length said every width, and a reading error can be prevented from producing it.

[0011] According to invention according to claim 2, since the \*\* damper member of each other is really formed every length with the \*\* damper member said every width, both the member can be fabricated with one metal mold, and a manufacturing cost sticks at a low price.

[0012] After making the \*\* damper member attach outside the lobe which protruded on the rear face of a tray said every width according to invention according to claim

3, by \*\* which attaches a stopper member at the tip of this lobe Only by carrying out fitting of the crevice formed in the narrow diameter portion which could attach the \*\* damper member easily [ the rear face of a tray ] every width of the, and was formed in the peripheral face of the \*\* damper member said every width at the drive chassis The drive chassis can be easily attached in a tray through the \*\* damper member every width.

[0013] Since the \*\* damper member is equipped with the body of a damper really formed in the \*\* damper member every width, and the engagement section which really protruded on this body of a damper every length according to invention according to claim 4, as mentioned above While attaching the \*\* damper member in a tray every width, the \*\* damper member can be attached easily [ a tray ] every length of the only by making it engage with the crevice which formed said engagement section in the lobe which really protruded on the rear face of a tray.

[0014]

[Example] Hereafter, the example of this invention is explained based on a drawing. Drawing 4 and drawing 5 show the condition of having carried out the disk player using the absorber 10 for the drive chassis support made of rubber which is one example of this invention every length, and said absorber 10 is equipped with \*\* absorber member 10b every length with \*\* absorber member 10a every width.

[0015] As \*\* damper member 10a consists of elastic bodies, such as rubber, said every width and it is shown in drawing 1 - drawing 3 It is formed in tubed [ as the conventional damper 3 (refer to drawing 6 - drawing 8 ) stated to the beginning / almost same ]. By being attached outside two or more tubed lobe 2a which really protruded on the rear-face proper place of a tray 2, and thrusting the stopper bolt (stopper member) 5 into the hole of each of this lobe 2a through a washer 4 By being pinched on a washer 4 and a tray 2 and making the narrow diameter portion 11 formed in the peripheral face of \*\* absorber member 10a this every width carry out fitting of the crevice 6a of the shape of a keyhole formed in the drive chassis 6 dismountable The drive chassis 6 is attached in the tray 2 through \*\* damper member 10a each width of every.

[0016] The body 13 of a damper of the shape of a rectangle really formed in the peripheral face center section of \*\* damper member 10a every width as \*\* damper member 10b was shown in drawing 1 - drawing 3 said every length, Set predetermined spacing on this body 13 of a damper mutually, really protrude on it, and it consists of the letter engagement sections 14 and 14 of a projection of the pair prolonged in the direction which intersects perpendicularly with the \*\*\*\* direction of a tray 9. The concave 15 which is open for free passage to the peripheral face of said body 13 of a damper at said crevice 6a is formed. In case crevice 6a of the drive chassis 6 is made to engage with a narrow diameter portion 11, the body 13 of a damper is constituted possible [ elastic deformation ] by not checking the engagement and installing a through tube 16 through the center section of the body 13 of a damper. Furthermore, abbreviation K0 character-like lobe 2b protrudes on the outside location which adjoins each lobe 2a of a tray 2. By countering the central monotonous section of each of this lobe 2b at said each engagement sections 14 and 14, forming the keyhole-like crevices 17 and 17, and making said each engagement sections 14 and 14 engage with these each crevices 17 and 17 Lobe 2b is pinched by the tip major-diameter heads 14a and 14a and the body 13 of a damper of each of those engagement sections 14 and 14, and \*\* damper member 10b is attached in the tray 2 dismountable every length. In addition, the inlet-port part of each crevices 17 and 17 is formed in taper side 17a of outside breadth, and it enables it to make the engagement sections 14 and 14 engage with each of those crevices 17

and 17 easily.

[0017] By retreating this tray 2 in the body 1 of a player, and pushing a start button, after setting Disk D to the tray 2 made to project from the body 1 of a player in the above-mentioned configuration, as shown in drawing 4 and drawing 5 While the drive device currently supported by the drive chassis 6 arranged to the rear-face side of said tray 2 operates, carrying out the rotation drive of the spindle motor 7 and rotating Disk D An optical pickup can be moved in the direction of a path of Disk D, and the information currently recorded on this disk D can be read now by the optical pickup.

[0018] In this case, since the body 1 of a player is carried out every length, the body 13 of a damper of \*\* damper member 10b carries out elastic deformation every length by the vertical vibration of the drive chassis 6 generated by operating a drive device, that vibration is absorbed, and a reading error can be prevented from being generated.

[0019] Moreover, as shown in the drawing 6 imaginary line, when the body 1 of a player is carried out every width, \*\* damper member 10a carries out elastic deformation every width by the vertical vibration of the drive chassis 6 generated by operating a drive device, the vibration is absorbed, and a reading error can be prevented from being generated.

[0020] In the above-mentioned example, although \*\* damper member 10b was really formed every length with \*\* damper member 10a every width, both the members 10a and 10b may be formed in another object. moreover -- although one pair of engagement section 14 of \*\* damper member 10b was formed every length -- the engagement section 14 -- one -- or three or more may be prepared.

[0021]

[Effect of the Invention] When the body of a player is made into the shape of a horizontal every width according to invention according to claim 1 When it is supported by the \*\* absorber member free [ the vertical direction rocking of a drive chassis ] every width and the body of a player is carried out every length Since said drive chassis is supported by the \*\* absorber member free [ the vertical direction rocking ] every length In any case, vibration of the drive chassis generated by operating a drive device is absorbed by said one of damper members, and a reading error can be prevented from producing it.

[0022] According to invention according to claim 2, the \*\* damper member can be fabricated with one metal mold every length with the \*\* damper member said every width, and a manufacturing cost sticks at a low price.

[0023] After making the \*\* damper member attach outside the lobe which protruded on the rear face of a tray said every width according to invention according to claim 3, by \*\* which attaches a stopper member at the tip of this lobe Only by carrying out fitting of the crevice formed in the narrow diameter portion which could attach the \*\* damper member easily [ the rear face of a tray ] every width of the, and was formed in the peripheral face of the \*\* damper member said every width at the drive chassis The drive chassis can be easily attached in a tray through the \*\* damper member every width.

[0024] Since the \*\* damper member is equipped with the body of a damper really formed in the \*\* damper member every width, and the engagement section which really protruded on this body of a damper every length according to invention according to claim 4, as mentioned above While attaching the \*\* damper member in a tray every width, the \*\* damper member can be attached easily [ a tray ] every length of the only by making it engage with the crevice which formed said engagement section in the lobe which really protruded on the rear face of a tray.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the cross-sectional view (A-A view Fig. of drawing 4 R> 4) of the disk player using the absorber for drive chassis support which is one example of this invention.

[Drawing 2] It is the expansion cross-sectional view of this important section.

[Drawing 3] It is the decomposition perspective view of this important section.

[Drawing 4] It is the side elevation of this disk player.

[Drawing 5] It is the perspective view of this disk player.

[Drawing 6] It is the cross-sectional view (B-B view Fig. of drawing 8 ) showing the conventional example.

[Drawing 7] It is the expansion cross-sectional view of this important section.

[Drawing 8] It is this top view.

[Description of Notations]

1 Body of Player

2 Tray

2a Lobe

2b Lobe

5 Stopper Bolt (Stopper Member)

6 Drive Chassis

6a Crevice

10 Damper

10a It is the \*\* damper member every width.

10b It is the \*\* damper member every length.

11 Narrow Diameter Portion

13 Body of Damper

14 Engagement Section

17 Crevice

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## PATENT ABSTRACTS OF JAPAN

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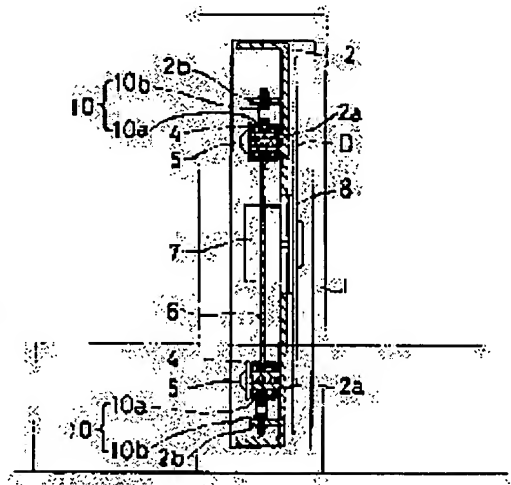
(72)Inventor : MORINAGA KENICHI

## (54) DAMPER FOR SUPPORTING DRIVE CHASSIS OF DISK PLAYER

## (57)Abstract:

PURPOSE: To prevent the generation of reading errors even when a player main body is laid horizontally or stood vertically.

CONSTITUTION: The drive chassis-supporting damper 10 is set between a disk- supporting tray 2 adapted to project/retreat to a player main body 1 of a disk player and a drive mechanism-supporting drive chassis 6 disposed on the rear side of the tray 2. The damper 10 is provided with a damper member 10a which supports the drive chassis 6 so that the drive chassis 6 can oscillate up and down in the state where the main body 1 is laid down horizontally, and a damper member 10b which supports the drive chassis 6 so that the drive chassis can oscillate up and down in the state where the main body 1 is stood upright.



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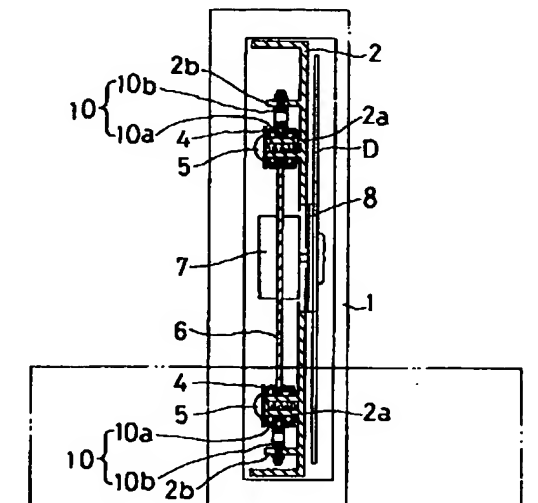
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(54) 【発明の名称】 ディスクプレーヤーのドライブシャシ支持用ダンパー

(57) 【要約】

【目的】 プレーヤー本体を横置きと縦置きとのいずれの置き方をしても、読み取りエラーを発生させないようにすること。

【構成】 ディスクプレーヤーのプレーヤー本体1に出退可能に設けたディスク支持用トレイ2と該トレイ2の裏面側に配置されたドライブ機構支持用ドライブシャシ6との間に設けられるドライブシャシ支持用ダンパー10であって、前記プレーヤー本体1を水平状に横置きした状態でドライブシャシ6を上下方向揺動可能に支持する横置き用ダンパー部材10aと、前記プレーヤー本体1を縦置きした状態でドライブシャシ6を上下方向揺動可能に支持する縦置き用ダンパー部材10bとを備えている。



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## 【特許請求の範囲】

【請求項1】 ディスクプレーヤーのプレーヤー本体に出退可能に設けたディスク支持用トレーと該トレーの裏面側に配置されたドライブ機構支持用ドライブシャーシとの間に設けられるドライブシャーシ支持用ダンパーであって、前記プレーヤー本体を水平状に横置きした状態でドライブシャーシを上下方向揺動可能に支持する横置き用ダンパー部材と、前記プレーヤー本体を縦置きした状態でドライブシャーシを上下方向揺動可能に支持する縦置き用ダンパー部材とを備えていることを特徴とするディスクプレーヤーのドライブシャーシ支持用ダンパー。

【請求項2】 前記横置き用ダンパー部材と縦置き用ダンパー部材とは互いに一体形成されていることを特徴とする請求項1記載のディスクプレーヤーのドライブシャーシ支持用ダンパー。

【請求項3】 前記横置き用ダンパー部材は、前記トレーの裏面に突設した突出部に外嵌されると共に、該突出部の先端に取り付けたストッパー部材とトレーとで挟持され、その外周面に形成した小径部にドライブシャーシに形成した凹部が取り外し可能に嵌合されていることを特徴とする請求項1または2記載のディスクプレーヤーのドライブシャーシ支持用ダンパー。

【請求項4】 前記縦置き用ダンパー部材は、横置き用ダンパー部材に一体形成された弾性変形可能なダンパー本体と、該ダンパー本体に一体突設され、前記トレーの裏面に一体突設した突出部に形成した凹部に取り外し可能に係合する係合部とを備えていることを特徴とする請求項2または3記載のディスクプレーヤーのドライブシャーシ支持用ダンパー。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】本発明は、CDと称されるコンパクトディスク（以下、ディスクと略称する）用ディスクプレーヤーのドライブシャーシ支持用ダンパーに関し、そのディスクプレーヤーを横置き型としても縦置き型としても使用可能にしたものである。

## 【0002】

【従来の技術】従来、ディスクプレーヤーの一例として図6～図8に示すものがある。これは、プレーヤー本体1に出退可能に設けたディスク支持用トレー2の裏面適所に複数本の筒状突出部2aが一体突設され、該各突出部2aに筒状ゴム製ダンパー3が外嵌され、該各突出部2aの孔に座金4を介してストッパーボルト5をねじ込むことにより、座金4とトレー2とで前記ダンパー3が挟持され、該ダンパー3の外周面に形成した小径部3aにドライブシャーシ6に形成した凹部6aを取り外し可能に嵌合させることにより、そのドライブシャーシ6が各ダンパー3を介してトレー2に支持され、前記ドライブシャーシ6にスピンドルモーター7などのドライブ機

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構が搭載されており、図8に示すように、プレーヤー本体1からトレー2を突出させ、ディスクDをスピンドルモーター7の回転軸に固着したターンテーブル8にセットした後、トレー2をプレーヤー本体1内に後退させ、スタートボタンを押すことにより、前記ドライブ機構が作動し、スピンドルモーター7を回転駆動してディスクDを回転させると共に、光ピックアップ（図示せず）をディスクDの径方向に移動させて、ディスクDに記録されている情報を読み取るようになっており、また、前記各ダンパー3が突出部2aの軸心方向に沿って伸縮することにより、ドライブ機構を作動させることにより発生するドライブシャーシ6の振動を吸収して、読み取りエラーが生じないようにしている。

## 【0003】

【発明が解決しようとする課題】上記従来の構成では、図6実線に示すように、プレーヤー本体1を横置きした場合には、ドライブ機構を作動させることにより発生するドライブシャーシ6の振動を各ダンパー3で吸収して、読み取りエラーが生じないようにできるが、図6仮想線で示すように、プレーヤー本体1を設置スペースの関係で縦置きした場合には、ドライブ機構を作動させることにより発生するドライブシャーシ6の振動を各ダンパー3で吸収することが困難であり、読み取りエラーが生じる虞れがある。

【0004】本発明は、上記従来の欠点を鑑み、プレーヤー本体を横置きと縦置きとのいずれの置き方としても、読み取りエラーを生じさせないようにしたディスクプレーヤーのドライブシャーシ支持用ダンパーを提供することを目的としている。

## 【0005】

【課題を解決するための手段】上記目的を達成するため、請求項1記載の発明は、ディスクプレーヤーのプレーヤー本体に出退可能に設けたディスク支持用トレーと該トレーの裏面側に配置されたドライブ機構支持用ドライブシャーシとの間に設けられるドライブシャーシ支持用ダンパーであって、前記プレーヤー本体を水平状に横置きした状態でドライブシャーシを上下方向揺動可能に支持する横置き用ダンパー部材と、前記プレーヤー本体を縦置きした状態でドライブシャーシを上下方向揺動可能に支持する縦置き用ダンパー部材とを備えていることを特徴としている。

【0006】請求項2記載の発明は、請求項1記載の発明において、前記横置き用ダンパー部材と縦置き用ダンパー部材とが互いに一体形成されていることを特徴としている。

【0007】請求項3記載の発明は、前記横置き用ダンパー部材が、前記トレーの裏面に突設した突出部に外嵌されると共に、該突出部の先端に取り付けたストッパー部材とトレーとで挟持され、その外周面に形成した小径部にドライブシャーシに形成した凹部が取り外し可能に

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嵌合されていることを特徴としている。

【0008】請求項4記載の発明は、請求項2または3記載の発明において、前記縦置き用ダンパー部材が、横置き用ダンパー部材に一体形成された弾性変形可能なダンパー本体と、該ダンパー本体に一体突設され、前記トレーの裏面に一体突設した突出部に形成した凹部に取り外し可能に係合する係合部とを備えていることを特徴としている。

【0009】

【作用】請求項1記載の発明において、プレーヤー本体から突出させたトレーにディスクをセットした後、該トレーをプレーヤー本体内に後退させ、スタートボタンを押すことにより、前記トレーの裏面側に配置したドライブシャフトに支持されているドライブ機構が作動して、前記ディスクを回転させると共に、光ピックアップをディスクの径方向に移動させて、ディスクに記録されている情報を光ピックアップにより読み取ることができるようになっている。

【0010】この場合、前記プレーヤー本体を水平状に横置きした場合には、横置き用ダンパー部材により前記ドライブシャフトが上下方向揺動自在に支持され、また、プレーヤー本体を縦置きした場合には、縦置き用ダンパー部材により前記ドライブシャフトが上下方向揺動自在に支持されるので、いずれの場合も、ドライブ機構を作動させることにより発生するドライブシャフトの振動を前記横置き用ダンパー部材または縦置き用ダンパー部材で吸収して、読み取りエラーが生じないようにできる。

【0011】請求項2記載の発明によれば、前記横置き用ダンパー部材と縦置き用ダンパー部材とが互いに一体形成されているから、その両部材を1つの金型で成形でき、製作費が安くつく。

【0012】請求項3記載の発明によれば、前記横置き用ダンパー部材をトレーの裏面に突設した突出部に外嵌させた後、該突出部の先端にストッパー部材を取り付けるだけで、その横置き用ダンパー部材をトレーの裏面に簡単に取り付けことができ、また、前記横置き用ダンパー部材の外周面に形成した小径部にドライブシャフトに形成した凹部を嵌合させるだけで、そのドライブシャフトを横置き用ダンパー部材を介してトレーに容易に取り付けることができる。

【0013】請求項4記載の発明によれば、縦置き用ダンパー部材が、横置き用ダンパー部材に一体形成されたダンパー本体と、該ダンパー本体に一体突設された係合部とを備えているから、前述したように、横置き用ダンパー部材をトレーに取り付けると共に、前記係合部をトレーの裏面に一体突設した突出部に形成した凹部に係合させるだけで、その縦置き用ダンパー部材をトレーに簡単に取り付けることができる。

【0014】

【実施例】以下、本発明の実施例を図面に基づいて説明する。図4及び図5は本発明の一実施例であるゴム製ドライブシャフト支持用ダンパー10を用いたディスクプレーヤーを縦置きした状態を示すものであって、前記ダンパー10は、横置き用ダンパー部材10aと、縦置き用ダンパー部材10bとを備えている。

【0015】前記横置き用ダンパー部材10aは、ゴムなどの弾性体からなり、図1～図3に示すように、冒頭に述べた従来のダンパー3（図6～図8参照）とはほぼ同一の筒状に形成され、トレー2の裏面適所に一体突設された複数本の筒状突出部2aに外嵌され、該各突出部2aの孔に座金4を介してストッパーボルト（ストッパー部材）5をねじ込むことにより、座金4とトレー2とで挟持され、該横置き用ダンパー部材10aの外周面に形成した小径部11にドライブシャフト6に形成した鍵穴状の凹部6aを取り外し可能に嵌合させることにより、そのドライブシャフト6が各横置き用ダンパー部材10aを介してトレー2に取り付けられている。

【0016】前記縦置き用ダンパー部材10bは、図1～図3に示すように、横置き用ダンパー部材10aの外周面中央部に一体形成された矩形状のダンパー本体13と、該ダンパー本体13に互いに所定間隔をおいて一体突設され、トレー9の出退方向とは直交する方向に延びる一対の突起状係合部14、14とからなり、前記ダンパー本体13の外周面に前記凹部6aに連通する凹溝15が形成されており、ドライブシャフト6の凹部6aを小径部11に係合させる際に、その係合を阻害せず、また、ダンパー本体13の中央部に貫通孔16を貫設することにより、そのダンパー本体13が弾性変形可能に構成されている。更に、トレー2の各突出部2aに隣接する外側位置に略コ字状の突出部2bが突設され、該各突出部2bの中央平板部に前記各係合部14、14に対向して鍵穴状の凹部17、17が形成され、該各凹部17、17に前記各係合部14、14に係合させることにより、その各係合部14、14の先端大径部14a、14aとダンパー本体13とで突出部2bを挟持して、縦置き用ダンパー部材10bがトレー2に取り外し可能に取り付けられている。なお、各凹部17、17の入口部分が外広りのテーパ面17aに形成されており、その各凹部17、17に係合部14、14を容易に係合させることができるようにしている。

【0017】上記構成において、図4及び図5に示すように、プレーヤー本体1から突出させたトレー2にディスクDをセットした後、該トレー2をプレーヤー本体1内に後退させ、スタートボタンを押すことにより、前記トレー2の裏面側に配置したドライブシャフト6に支持されているドライブ機構が作動し、スピンドルモーター7を回転駆動してディスクDを回転させると共に、光ピックアップをディスクDの径方向に移動させて、該ディスクDに記録されている情報を光ピックアップにより読

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み取ることができるようになっている。

【0018】この場合、プレーヤー本体1が縦置きされているので、ドライブ機構を作動させることにより発生するドライブシャフト6の上下振動により縦置き用ダンパー部材10bのダンパー本体13が弾性変形して、その振動を吸収し、読み取りエラーが生じないようにできる。

【0019】また、図6仮想線に示すように、プレーヤー本体1が横置きされた場合には、ドライブ機構を作動させることにより発生するドライブシャフト6の上下振動により横置き用ダンパー部材10aが弾性変形して、その振動を吸収し、読み取りエラーが生じないようにできる。

【0020】上記実施例では、横置き用ダンパー部材10aと縦置き用ダンパー部材10bとを一体形成したが、その両部材10a、10bを別体に形成してもよい。また、縦置き用ダンパー部材10bの係合部14を一對設けたが、その係合部14を1つまたは3つ以上設けてもよい。

【0021】

【発明の効果】請求項1記載の発明によれば、プレーヤー本体を水平状に横置きした場合には、横置き用ダンパー部材によりドライブシャフトが上下方向揺動自在に支持され、また、プレーヤー本体を縦置きした場合には、縦置き用ダンパー部材により前記ドライブシャフトが上下方向揺動自在に支持されるので、いずれの場合も、ドライブ機構を作動させることにより発生するドライブシャフトの振動を前記いずれか一方のダンパー部材により吸収して、読み取りエラーが生じないようにできる。

【0022】請求項2記載の発明によれば、前記横置き用ダンパー部材と縦置き用ダンパー部材とを1つの金型で成形でき、製作費が安くつく。

【0023】請求項3記載の発明によれば、前記横置き用ダンパー部材をトレーの裏面に突設した突出部に外嵌させた後、該突出部の先端にストッパー部材を取り付けるだけで、その横置き用ダンパー部材をトレーの裏面に簡単に取り付けことができ、また、前記横置き用ダンパー部材の外周面に形成した小径部にドライブシャフトに

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形成した凹部を嵌合させるだけで、そのドライブシャフトを横置き用ダンパー部材を介してトレーに容易に取り付けることができる。

【0024】請求項4記載の発明によれば、縦置き用ダンパー部材が、横置き用ダンパー部材に一体形成されたダンパー本体と、該ダンパー本体に一体突設された係合部とを備えているから、前述したように、横置き用ダンパー部材をトレーに取り付けると共に、前記係合部をトレーの裏面に一体突設した突出部に形成した凹部に係合させるだけで、その縦置き用ダンパー部材をトレーに簡単に取り付けることができる。

【図面の簡単な説明】

【図1】本発明の一実施例であるドライブシャフト支持用ダンパーを用いたディスクプレーヤーの横断面図（図4のA-A矢視図）である。

【図2】同要部の拡大横断面図である。

【図3】同要部の分解斜視図である。

【図4】同ディスクプレーヤーの側面図である。

【図5】同ディスクプレーヤーの斜視図である。

20 【図6】従来例を示す横断面図（図8のB-B矢視図）である。

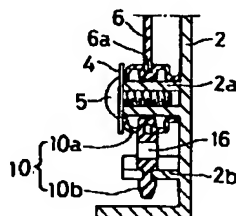
【図7】同要部の拡大横断面図である。

【図8】同平面図である。

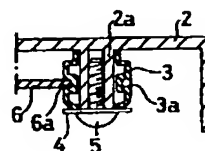
【符号の説明】

- |     |                   |
|-----|-------------------|
| 1   | プレーヤー本体           |
| 2   | トレー               |
| 2a  | 突出部               |
| 2b  | 突出部               |
| 5   | ストッパーボルト（ストッパー部材） |
| 6   | ドライブシャフト          |
| 6a  | 凹部                |
| 10  | ダンパー              |
| 10a | 横置き用ダンパー部材        |
| 10b | 縦置き用ダンパー部材        |
| 11  | 小径部               |
| 13  | ダンパー本体            |
| 14  | 係合部               |
| 17  | 凹部                |

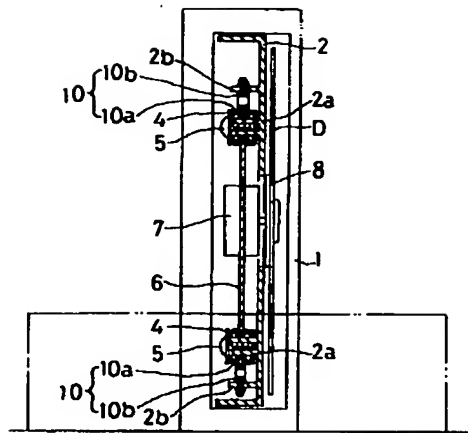
【図2】



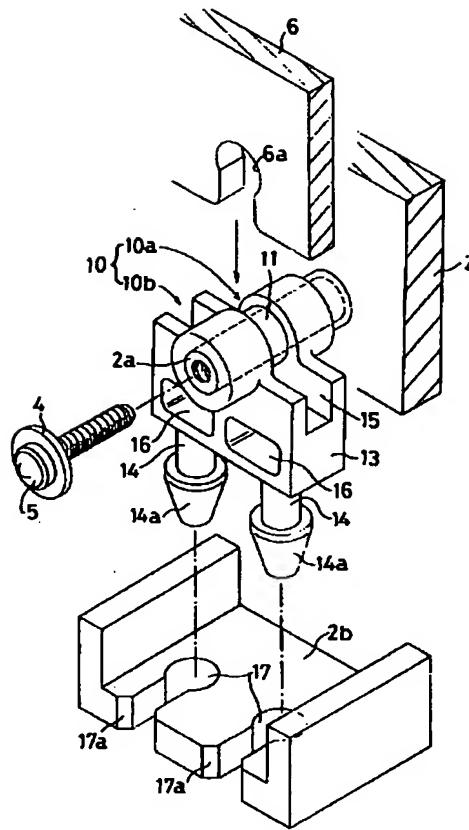
【図7】



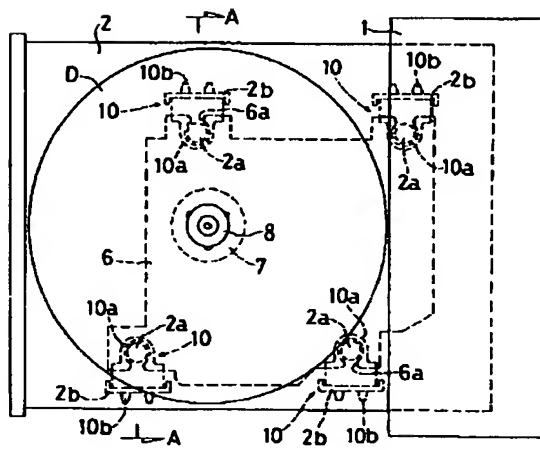
【図1】



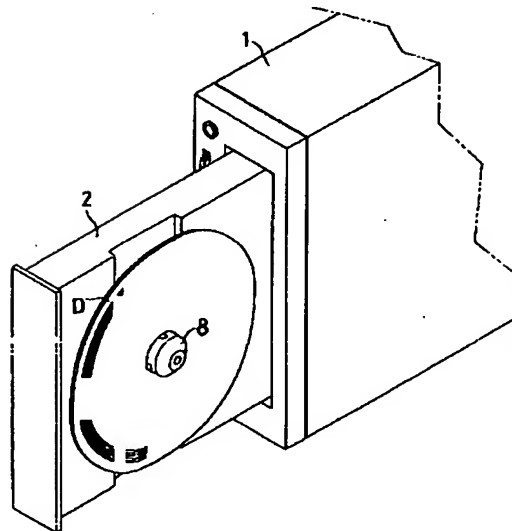
【図3】



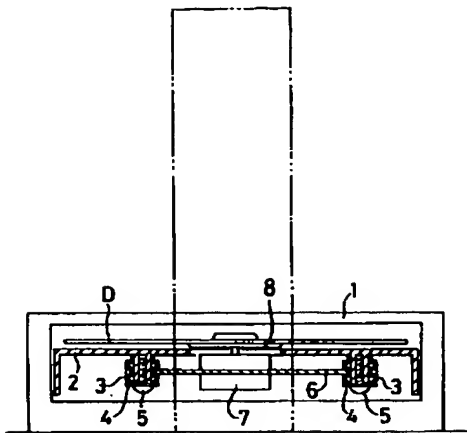
【図4】



【図5】



【図6】



【図8】

